

# Fire - 401

## Create a firebreak around your property

Every day Americans experience the tragedy of fire. Each year more than 4,500 Americans die in fires and more than 30,000 are injured. In fact, fires kill more Americans than all other natural disasters combined. Fortunately, unlike other disasters, most fire losses can be prevented through effective public education and awareness initiatives.



The risk of fire destroying homes and property increases in areas where wildlands and developed areas meet. More people are making their homes in woodland settings—in forests, rural areas or remote mountain sites. In areas where wildfires have occurred naturally for centuries, homes and gardens now add fuel that can accelerate the spread of fire. When wildfires occur today in these areas, limited resources often force fire fighters to choose between attacking the fire or defending a particular home. Manufactured homes, where death rates are twice as high as for other housing types, are of particular concern. Do not rely on luck—plan ahead.

## Potential Hazard



Wildfires destroy hundreds of homes and acres of land every year. When the wind is blowing, a fire can spread very rapidly. If it is blowing strongly in the direction of your home, the fire could be fatal to you and your family. Having underbrush, dead leaves, or vegetation on the outside walls of your home increases your risk of losing your home. Recognizing these hazards is the first step toward making sure that they do not increase your risk of losing your life or home.

## Mitigation Measure

Using fire-safe landscaping is an effective way to create an area of defensible space between your home and flammable

vegetation. Interrupting a fire's potential path is a first step to protecting your property and the area near your home.

Be sure to keep potential combustibles such as stacked firewood away from your home. If you live in a high-risk wildfire area, this small inconvenience is well worth the effort when compared to the increased safety it provides to your life and property.



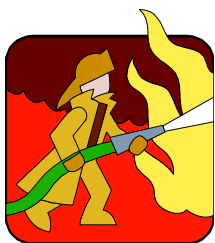
Experts say that if possible, you should keep a defensible space of at least 30' around your home cleared of vegetation. Hillsides are especially dangerous because they are very likely to catch gusts of wind. As a result, experts recommend that you clear a perimeter up to 100' for very steep hillsides. Also, remove vines from the sides of your home. Bare walls may not seem as pretty, but it is best to remove possible fuel from growing on your home. Keep your lawn trimmed and leaves raked, and keep your roof and rain-gutters free from debris like dead limbs and leaves.

Maintain a well-pruned and watered landscape to provide additional protection against fire. Shrubs should be pruned regularly. Remove small trees and plants growing under larger trees because they allow ground fires to jump into tree crowns. Space trees 30' apart, and prune them to a height of 8' to 10'. Pruning cuts should be clean and smooth; avoid flush cuts and stubs. Young, vigorous trees can withstand more severe pruning than older, weaker trees. Remove dead and diseased branches. To avoid stress to the tree, remove no more than one-third of its live foliage at one time.

The best time of the year to clean up the forest floor around your home is late fall after the leaves have fallen. This job does not require any special skills and should not take very long. This cleanup should be done every year. After the first cleanup of accumulated vegetation, the

job should require less time and effort. Where possible, you should promote the growth of fire-resistant plants and vegetation. Although no plant or tree is truly "fire-proof," some catch fire less readily than others.





## Fire - 402

### Relocate or protect your exterior fuel tanks

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### Potential Hazard



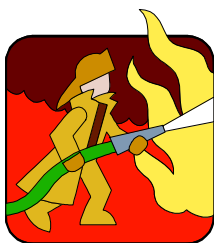
If a wildfire gets close to your home, it is very dangerous to have a large container of fuel near or attached to the outside of your house. Besides the possibility that the fuel may enlarge the fire already in progress, having a fuel tank nearby can make saving your home very difficult because no one can go near it. If a fuel tank gets hot enough to ignite, it can have the same effect as a small bomb going off.

### Mitigation Measure

You should move the external fuel tank about 30 feet away from your home. Doing so may require using equipment powerful enough to

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.





## Fire - 403

### Maintain your gutters & clear roof of debris

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### Potential Hazard

Fires start easily and burn rapidly with light fuels like dry grasses and leaves, and then they ignite the homes nestled among them. Every year, wildfires destroy hundreds of homes across the country. In areas where wildlands



and developed properties are side by side, homes and other structures can become more fuel for fires. Dry leaves and twigs in your home's gutters may become added fuel to potential fires as well as interfere with their main purpose, to carry water away from your home.

## Mitigation Measure

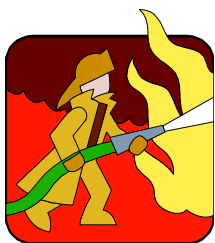
Denying fuel to a fire is one of the most successful ways of containing it and possibly saving your life and your home. If you live in a high fire hazard area, dead leaves and twigs need to be removed from your gutters and anywhere else on your roof where dead brush can accumulate. Many companies offer gutter cleaning services. The best time of the year to clean your gutters is in late autumn after the leaves have fallen. The cleanup should be done once a year. A crew of one or two people can clean your home's gutters in an hour or two.



One way to keep your roof clear of debris is to trim tree branches that overhang your home. Also, if there are dead or dying trees near or overhanging your home, you should have these trees removed.

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## Fire - 404

### Cover openings with fine mesh

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### Potential Hazard



Fire needs fuel – something to burn, like grass, bushes, trees, or the homes nestled among them. Every year, wildfires destroy hundreds of homes and acres of land across the country. In areas where wildlands and developed properties are side by side, homes and other structures can become more fuel for fires. A slight breeze could carry burning cinders or sparks through any opening into your home. They can enter through even a small opening such as exterior venting, attic louvers, or the eaves. Sparks entering the house could set your house on fire.

## Mitigation Measure

Using a non-flammable fine wire mesh screen to cover the openings of your home will keep floating cinders or hot ash from entering and starting a fire. The reverse is also true; a fire that starts inside will be less likely to travel to the outside if openings are covered or protected by non-flammable wire mesh screens. This measure will help protect you and your family, your neighbors, and the environment.

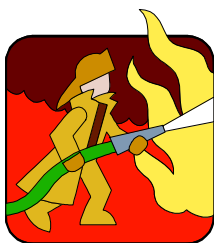
All windows should have screens, and if you frequently leave your doors open, you should put screens on them, too. Screens are relatively easy to install, and even custom-made screens for irregular sized doors and windows are affordable.



Notes:

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## Fire - 405

### Use fire resistant materials on your home

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### Potential Hazard



When wildfires and brush fires spread to homes, it is often because burning branches, leaves, and other debris are lifted by the heated air and carried by the wind to roofs. Wood or asphalt shingles catch fire more easily than fire-resistant materials like slate, tile, and metal, which offer greater protection to your home. Although a distant wildfire is more likely to set your roof on fire than any other part of your house, it is also possible that hot cinders landing on the side of your home could set your home on fire.

## Mitigation Measure

When you need to replace your roof, it is best to replace flammable roofing with fire-resistant materials such as slate, terra cotta or other types of tile, or standing-seam metal roofing. Although the fire-resistant materials are a little more expensive, you are also buying added protection against fire.

Slate and tile shingles generally are much heavier than asphalt or wood shingles. If you are considering switching to one of these heavier coverings, your roofing contractor should determine whether the framing of your home is strong enough to support them. If you live in an area where snow loads are a problem, consider switching to a modern standing-seam metal roof. Besides being fire resistant, it usually sheds snow efficiently.

If it is necessary to replace the wood siding on your house, you should use a non-flammable material like aluminum. Similarly, if you are replacing any doors and shutters, you should use aluminum or another metal. In addition, when you remodel your home, you should consider using fire resistant materials such as metal studs and fire resistant wall board.



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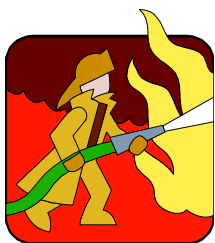
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## Fire - 406

### Install Outdoor Spigots

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### Potential Hazard

Whether a wildfire starts from natural causes, accidents, or carelessness, if it is near your home, it could quickly consume everything you own. If you act immediately, you may be able to bring a small fire under control and extinguish it. Having a source of water available outdoors can make a critical difference to whether your property can be saved.

Even if the fire is so far away that you cannot put it out, having an outside source of water is very advantageous. If you have enough warning, you can wet down the vegetation surrounding your home as well as your roof and siding. This action could lessen your damage from the wildfire. Also, if the wildfire is moving rapidly, wetting your home and property could protect your home long enough for the fire to pass or for firefighters to come to your assistance.

Homes that are in densely wooded areas or in areas with large amounts of underbrush are especially susceptible to wildfires.

## Mitigation Measure

If you live in an area at high risk from wildfires and your home does not have a spigot outdoors, you should install one. In fact, it is even better if your home has two outdoor spigots. With a spigot on both sides of your home, you can respond to a small fire emergency more quickly than if you had to use a hose attached to a spigot on the other side of your home. Having a second hose also provides you a greater capability to reach the places you want to wet down. Hoses should be equipped with nozzles in order to gain extra distance and ease in watering. Furthermore, having a nozzle makes it easier to reach the uppermost portions of your roof.



Of course, in the case of a large fire, if you are at all uncertain about whether the fire is controllable, you should evacuate the area and seek safety. If the authorities issue a general directive to evacuate an area, follow their instructions. Preserving your life and the lives of your loved ones is more important than anything else.

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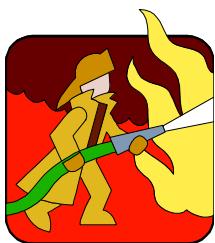
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## Fire - 407

### Install smoke & carbon monoxide detectors

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### Potential Hazard



Smoke detectors are one of the most effective safety features you can install. If you have a fire, a working smoke detector can save your life and the lives of your loved ones. In fact, having a working smoke detector can double your chances of survival. A detector is the single most important means of preventing home fire fatalities by providing an early warning signal so you and your family can escape.





## Mitigation Measure

Smoke detectors have saved thousands of lives, but homeowners do not always use them as effectively as they should. First, twelve percent of homes without detectors account for more than half of the fires. Second, it is estimated that one-third of the detectors in place are useless because they have a worn out battery; and third, smoke detectors in many homes are poorly located or there are not enough of them to protect the occupants properly.

Many hardware, home supply, or general merchandise stores carry smoke detectors. If you are unsure where to buy one in your community, call your local fire department (on a non-emergency telephone number) for suggestions.



The primary job of your smoke detector is to alert you to fires while you are asleep. Thus, your smoke detector should be located outside bedrooms or sleeping areas. In a multi-story home, a fire on a floor level without a smoke detector can grow to dangerous size before enough smoke rises in a stairway to set off a detector on an upper floor.

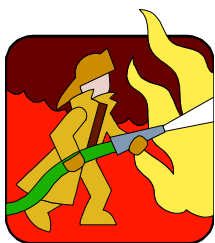


There are a few places where a smoke detector should not be placed. These include kitchens and garages because cooking fumes and car exhaust are likely to set them off, and unheated attics and crawl spaces because they can get too cold or hot for the electronics to work properly. Fires in these areas are generally detected by the other smoke detectors in enough time for you to escape safely. If you want a detector in these spaces, use a heat detector.

Remember that smoke detectors are the main safety devices in any home protection plan.

Smoke detectors are easy to install. In most cases, all you will need is a screw driver. Many brands are self-adhering and automatically stick to the wall or ceiling where they are placed. However, be sure to follow the directions from the manufacturer because each brand is different. If you are uncomfortable standing on a ladder, ask a relative or friend for help. Some fire departments will install a smoke detector in your home for you. Because smoke and many deadly gases rise, installing your smoke detectors at the proper level will provide you with the earliest warning possible.





## Fire - 408

### Provide fire extinguishers in your home

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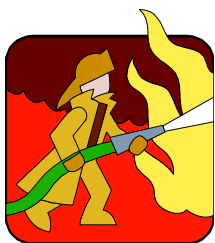


### Potential Hazard

If you detect a small fire near your home, you may not have time to wait for the fire department to put out the fire. If you are lucky enough to catch a fire still in its formative stages, you may be able to put it out by yourself. However, the chance that a fire might be within reach of your garden hose is probably slim. The kitchen stove or space heaters may catch fire, or a cigarette or cigar could start a fire in any room in your house or outside your home.

### Mitigation Measure

Having a wall mounted fire extinguisher will make it easier for you to put out a fire quickly. Fire extinguishers come in different sizes. Almost anyone can handle the smaller ones. Most adults can operate larger extinguishers. Be sure you and everyone in your family understands how to operate the extinguisher. Before you face a fire emergency, you should practice holding and aiming the extinguisher. Then, in case of a fire, you will know exactly what to do and be able to do it. While you are practicing, be sure you do not pull the trigger on the extinguisher and set it off. Also, have the pressure of the extinguisher checked to ensure the device continues to remain effective. Your local fire department can perform this service for you.



## Fire - 409

### Install a spark arrester in your chimney

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### Potential Hazard

We've all seen sparks or red-hot ash fly out of chimneys at night. That hot ash or spark rising out of your chimney could land in dry foliage. If it is still hot, there is a chance that this spark could start a major fire that could endanger your home and the surrounding community.



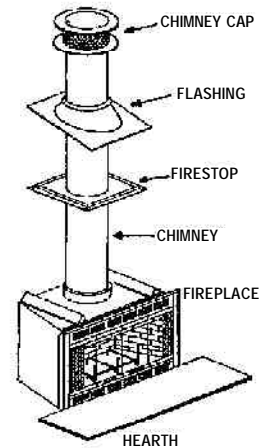
A fire is even more likely to start from a spark landing in a tree than on the ground for several reasons. Because the spark takes less time to go into a tree than to fall to the ground, it is more likely to be hot enough to catch fire. Also, a limb is exposed to breezes which can fan any smoldering sparks into a fire.



## Mitigation Measure

Having either a chimney cap or a spark with wire mesh arrester on your chimney can keep hot particles from drifting out the top of your chimney and starting a fire. Although chimney caps keep rain from falling down the chimney, they do not keep sparks from escaping. Therefore, before you install a chimney cap, be sure it has a fine wire mesh between the cap and the chimney. Any chimney cleaning service can install a spark arrester, whether your chimney has a cap or not. A spark arrester is usually spring-loaded and fits into the top of the chimney. Many come with screws or bolts so you can anchor them to the inside wall of the chimney. A spark arrester should be inspected every five years to make sure it has not rusted.

Keep tree branches and limbs about 15' to 20' away from your chimney stack. It is best to hire a tree professional who knows how to trim the tree so that it does not become unbalanced in the process and create another hazard.



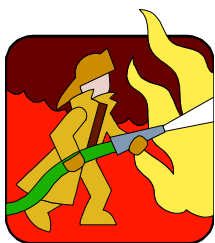
Notes:

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## Fire - 410

### Keep your chimney clean

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### Potential Hazard

Thick creosote build-up inside a chimney can ignite into an intense blaze. Chimney fires can cause flames or dense smoke to shoot from the top of the chimney. If a flaming spark or red-hot ash from your chimney lands on the ground or in a tree, it can start a fire there. Your chimney can turn into a flaming pillar that sets your home on fire. It might even burn explosively and set nearby property and homes on fire.



The experts say a regularly used chimney should be cleaned once a year. “Regular use” means as little as one cord of wood a year. A chimney needs regular cleaning because the creosote from the fires builds up on the inside of the chimney, and that area eventually becomes lacquered. This lacquer, when it is hot enough to flame, can be difficult to put out, especially when the fire is located in a hard to reach area.



Cleaning your chimney every year may save you the expense of hiring a professional chimney sweep. If your chimney has never been cleaned or has not been cleaned for a long time, it may require a professional cleaning.

Notes:

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### Unit 3: Recognize the Risks and Mitigation Measures

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Notes	Wildfire Exercise Sheet
Assess Fire Risk	Participants look at pictures of potential risks and identify the appropriate mitigation measures by putting the corresponding numbers from the Action Checklist on the answer sheet.

Wildfire Answer Sheet	
Picture Number	Action Checklist Number
1	
2	
3	
4	
5	
6	
7	
8	

Verify Mastery	Discuss responses.
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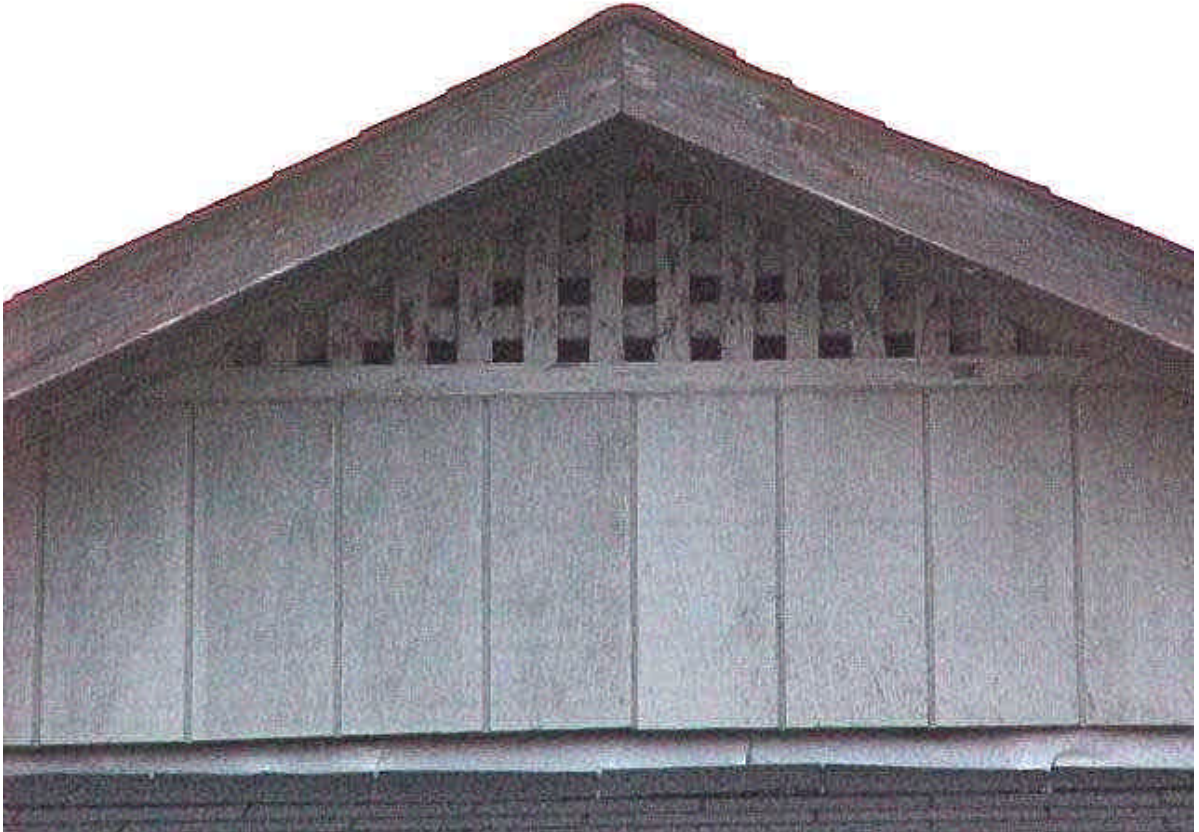
## **Unit 3: Recognize the Risks and Mitigation Measures**

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### **Wildfire Risk Pictures**

(See following 8 pages)

# Wildfire Risk No. 1



## Wildfire Risk No. 2





## Wildfire Risk No. 3



## Wildfire Risk No. 4



## Wildfire Risk No. 5





## Wildfire Risk No. 6



## Wildfire Risk No. 7





## Wildfire Risk No. 8



### Unit 3: Recognize the Risks and Mitigation Measures

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	<b>Wildfire Exercise Sheet – Answer Key</b>
	The answers below are only possible, not definite. Encourage participants to identify potential hidden risks that may necessarily be visible in the photo.

<b>Wildfire Answer Sheet</b>	
<b>Picture Number</b>	<b>Action Checklist Number</b>
1	403, 404, 405
2	401, 403, 404, 405, 406
3	401, 403, 404, 405, 406, 409, 410
4	401, 402
5	401, 403, 405, 409, 410
6	407, 408, 410
7	401, 402, 405, 406, 408
8	401, 403, 404, 405, 406